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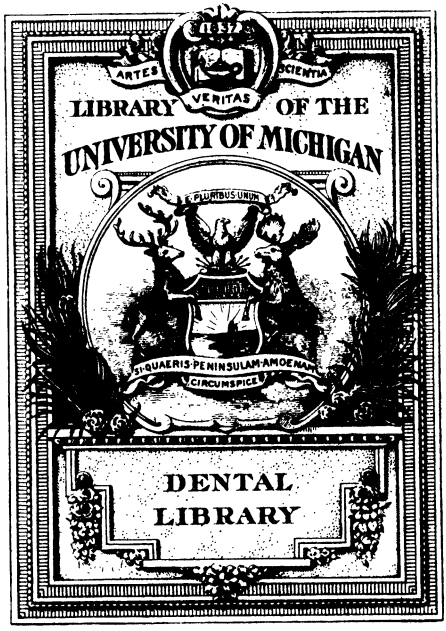
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The AMERICAN DENTAL JOURNAL

Edited By
BERNARD J. CIGRAND, M. S., D. D. S.

DECLARATION:

Devoted to advancing the art and science of dentistry;
Arousing a deeper conception of our duty to the public;
Instilling a broader and more liberal professional spirit;
Aiding in elevating the plane of dental organizations;
Supporting state boards in executing dental laws;
Lending assistance to worthy and ethical practitioners;
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The MERICAN DENTAL JOURNAL

DR. BERNARD J. CIGRAND, Editor

Published on the fourth of every month by The Ross Dental Manufacturing Company.

Editorials and Comments

"The editor assumed charge of this journal with the signed understanding that he shall have absolute and unlimited control and supervision of the editorial and literary elements; this unusual grant makes it possible to render the profession an independent periodical; the title page clearly indicates the scope under the new policy of this old established journal."—*Publishers.*

THE FACE AS A PART OF DENTAL STUDY.

The dentist who concerns himself with the mere study of the mouth alone, is not fulfilling the great mission of his profession for the practice of dental prosthesis will lead him to take into account the adjacent elements of character as indicated by the forehead, eyes, nose, mouth, cheeks and chin. All these enter into the problem of proper restoration and they all lend an aid on the proper reproduction of best parts of the dental fabric.

The profession is under the greatest possible debt to a Swiss investigator for directing attention to the expression of character as shown in the mouth and teeth. Johann Kasper Lavater, who was born in Zurich, Switzerland, on November 15, 1741, and died January 2, 1801, was the first scientist to aim at a classification of the mouth and dental organs and his huge volume on the face and its parts should be in every dental library.

While he was a century ahead of his time and in consequence was severely criticised by those who did not understand him, this should not, at this late day, prevent dentists from studying his remarkable writings.

Well, some will say, he made mistakes! Did you ever see a "doer" who did not make mistakes? And only a big man can make a big mistake. The average bit of humanity could not make a big error since they are not in a position to effect such a calamity. Yes, Lavater made some mistakes, but they are so trifling when compared with what good earnest accomplishment, that one can easily overlook and forget the errors which were of good intention.

THE AMERICAN DENTAL JOURNAL presents in this issue a picture entitled "Lavater in His Study," a painting much prized in Germany. It illustrates his study of the entire face, but more especially the lower third, which he claimed contained the major expression of character. His diagrams of teeth, their cusps, and their general contour received his eagle eye observation and it can be stated that many of our modern text books on anatomy or physiology do not approach the perfection for accuracy which those of Lavator possess, and they were made nearly one hundred and twenty-five years ago.

Irregularities, malocclusion, ulceration and loss of dental antagonism all received his careful study, and the great wonder is that his works have never been brought to the attention of the dental profession.

The picture here reproduced is splendid and general conception of the art product is well proportioned.

A study of the face and its component parts is truly in the dental field notwithstanding that at present it is still left from the curriculum.

As long ago as 1892 your editor gave consideration to facial contours and dental expression, in his lectures to the dental students of prosthesis. In June, 1902, he also read a paper before the Rockford Odontological Society in which occur these lines, and they adapt themselves happily into the problem under discussion:

"There is an adage that has been handed down to us which says, 'He who knows not other languages knows not his own.' The truth of this is equally applicable to the trades and professions, and the practitioners of our calling are emphasizing the necessity of studying professions, which in basic purposes are correlated to dentistry. The study of fine art, sculpture and psychology are among the latest recommendations to the student curriculum, and practitioners will

LAVATER IN HIS STUDY

(From Dr. Cigrand's Historical Collection)—Compliments of American Dental Journal.

do well to observe the benefits which are derived from possessing a knowledge of these kindred vocations.

"The profession in which we are engaged affords an opportunity for inquiry into the general disposition of the people; for it is in the practice of our profession that we come in direct contact with all classes, conditions and races of humanity.

"I am impelled to say in the beginning of my paper that it matters little how learned or proficient one may be in the general practice of the principles of dental science, if he be ignorant or regardless of the general character or idiosyncrasies of the patients for whom he operates, he most certainly will be a failure as a dentist.

"A dentist should be a good judge of human nature and be able to control his various patients with their different peculiarities, and this requires more than an average intelligence. Much, however, can be acquired by practice and study of the subject. This important faculty is so closely related to the various qualifications of a dentist that its advantage can readily be seen.

"A knowledge of human nature is indispensable to any person who makes a livelihood by direct contact with the public. The merchant, the lawyer, the theologian, the physician, the dentist, and the teacher require this talent or their service is soon dispensed with. The inventor, the scientist, or the investigator has no great need for a knowledge of human wants since the nature of his labors does not depend on the dispositions and opinions of the general public. The good which results from a knowledge of faceology can scarcely be defined.

"Among the distinguished men who attribute their success to a knowledge of human nature, we find in theology Luther, Spurgeon and Beecher; in law, Choate, Webster and Lincoln; in medicine, Hypocrates, Agnew and Bell. In literature, Shakespeare, Goethe and Hugo. In finance, Sherman, Gage and Rothschild; in statesmanship, Jefferson, Monroe and McKinley; in trade and commerce, Stewart, Armour and Wanamaker; in war, Washington, Nepoleon and Lee. Acknowledgments of this character must awaken in all desiring success an interest in the fascinating subject of faciology. It is claimed that President Lincoln seldom made an important appointment, no matter how well and influentially recommended, without asking a personal interview with the candidate. This afforded

an opportunity of "gauging the caliber" of the prospective official.

"That the strength, quality and disposition of the mind are evidenced by facial symbols there can be little doubt. Dr. Gray, whose anatomy has become a recognized text-book, wrote in his later years as follows: 'A word as to the lines of the face as indicative of expression. Every one pays unconscious homage to the study of physiognomy. When scanning the features of a stranger he draws conclusions as to his intelligence, disposition and character. The muscles of the features are generally described as arising from the bony fabric of the face and are inserted into the nose, corners of the mouth and the lips. They drop fibres into the skin along their course, so that there is hardly a part of the face which has not little fibres to move it. The habitual recurrence of good or bad thoughts, the indulgence in particular modes of life call into play corresponding sets of muscles, which by producing folds and wrinkles gives permanent cast to the features, and speaks a language which all can understand.' The great German scholar and writer, Schiller, says: 'It is an admirable proof of infinite wisdom, that what is noble and hateful imprints upon it a revolting expression.' I might mention scores of others equally eminent, but I well know that there is not present here a practitioner who does not fully realize the importance of a practical knowledge of temperaments and facial outlines.

"In short, the sunshine and shadow of our lives are correspondingly engraven on the moldable face. And it is this ever and constant change of the face that demonstrates the two-sidedness of man's being. It proves beyond the shadow of a doubt that all men are subject to development or the reverse; it also clearly shows that all men, and I mean women, too, have a twofold or "dual character," the one being natural, the other acquired. This "dual character" is emphatically represented in histories, novels and plays. Be the acquired character what it will, the innate or created one is ever the power behind the throne. The Germans have a saying which is true to the test, namely, 'What the gods have given you the winds will not blow away.'

"But it is the innate or natural dispositions of persons that we as dentists must most clearly acquaint ourselves with, since while engaged in our work we operate on nature's being, and any pain or

discomfort which we inflict has an immediate response, a response so sudden that it is almost beyond the power of the patient to control. I do not wish to be understood as meaning that a keen knowledge of the acquired disposition is needless, for we must be well versed in both the innate as well as the acquired characters if we desire to accomplish successfully our task, and at the same time keep in good humor the acquired character of the patient. A safe rule to follow is this: 'Keep on the dexter side of the innate character.'

"Now, having given a few general observations on the certainty and usefulness of an understanding of natures, I will endeavor to briefly tell what indices of character are revealed on the mouth and its environs, and let me assure you that the deductions which I herewith present have been evolved in a large measure from personal observation, guided by the safe rule of comparison. Much of what I know on the subject must of necessity come from reading and research, but the conclusions which I have drawn are uninfluenced by preëxisting theories; nor have I projected a theory and then gone forth to find material to prove it true, but I have made it a point to collect all possible notes, observe closely and compare freely, before permitting myself to formulate a theory or conclusion.

"Anatomists and physiologists differ widely as to the definition of the face. There are those who include the forehead as a part of the face, and there are others who claim that the face begins at the superciliary ridges and embraces the eyes, nose, cheeks, mouth and chin. I prefer the former definition, which holds that the forehead is included in the face. Dividing the face into three equal parts, we have in the lower third the lips, mouth, chin and greater portion of the cheeks and inferior maxilla.

"Dr. Oliver Wendell Holmes says: 'All parts of the face doubtless have their fixed relations to each other and to the character of the person to whom the face belongs, but there is one feature which more than any other facial sign reveals the nature of the individual. This feature is the mouth, and the portion of it referred to is the corner. A circle of half an inch radius, having its center at the junction of the two lips, will include the chief focus of expression.'

"The Oriental people have a proverb which reads: 'Show me a

man's eyes and I will show you what he might have been and show me his mouth and I will tell you what he is.' Artists have recognized long since that perfection in portraying lies in having the mouth accurately outlined and shaded, the slightest deviation from the original will magnify itself on the canvas. They realize that the index of individuality is more pronounced in the lips than in another attribute to the face.

"The tongue may be silent, but the mouth and lips never cease to speak. They are ever translating to intelligent observers the inner life of the owner.

"A long lip, when viewed laterally, indicates firmness, and when perfectly straight shows a tendency toward stubbornness. The saying, 'he has a stiff upper lip' is very appropriate when it is intended to convey that the person is firm and unyielding. People possessing this kind of lip never surrender, and meet the assaults of adversity or the attacks of enemies as the rock meets the surging waves. A large number of generals have lips of this character, General Washington being prominent among them. When the lip curves in at the junction of the lips it is a mark of determination, and is usually seen in explorers and investigators, as seen in Herbert Spencer. A short upper lip portrays a weak and wavering character. People with this symbol are constantly changing their minds and have hardly enough stability and fixedness of purpose to gain a livelihood. They are the 'I can't' element in the race, or, as the French say, 'He's like the weather.'

"An upper lip which is short and fails to cover the teeth and gums indicates approbativeness. This lip is seen in people of a vain disposition; they are mortified by censure and greatly elated by words of commendation; they are too fond of praise and delight in being flattered; to blame them wounds their feelings beyond reason. People of this index are so sensitive to criticism that they shun public office or any great public trust. Imagine Cæsar or Napoleon with a short upper lip, half open mouth. Could you dream of Jefferson, Franklin or Lincoln with this gaping mouth? These lips no man had who served in the armies of Napoleon, for he made it a rule to promote no man who could not close his mouth.

"The bloated lip, common to the dissipated individual, is only

too frequently seen in our present civilization. Its drooping lower lip and depressed corners speaks a sad tale of selfish indulgence.

The senually inclined person possesses stuck and puffy lips. The upper lip curling upward, the lower lip turning downward, and the corner of the mouth seems full and lifeless.

"The lips of contempt or scorn are familiar to us all. Contempt protrudes the lower lip and draws down the corner of the mouth. People of this lip are naturally inclined to fault finding; they long to provoke the ill-will of those about them; they delight in abridging the pleasure of their friends and have a cold, repulsive and antagonistic bearing. Andrew Johnson possessed many of these traits.

"The thin and illy defined lip denotes a cold, unloving nature; industry, love of order and precision are there in unmistaking language. This class of people are unsocial and prefer to live to themselves; it bores them to have companionship with any one; they are given to seclusion; they form but few attachments and manifest but a sparing degree of affection for any person. They are the class of people who have no time for recreation and are incessantly employed. A lip of this character we see in the face of John Quincy Adams.

"You have all recognized the great variety which exists in the forms and quality of the chin. It may be prominent or retreating; long or short; pointed or round; square or dimpled. Few attach any significance to the shape of the chin, supposing that its shape is merely accidental, but those of you who have given the matter serious thought will assert that the chin demonstrates characteristics and peculiarities. One of the marked differences between man and beast is the fact that the man has a chin while the animal presents no such development. We have all noticed that a chinless person is weak minded and bordering on idiocy or imbecility; this is certainly strange, yet nature's symbol must bow down to nature's command.

"The prominent chin always depicts a positive character and can be seen on persons noted for resolution, perseverance and executiveness. These people are prone to control and to command others and to make external circumstances bend to human powers. Courage and fortitude are here clearly stamped. They are people who usually substantiate by argument or force what they declare.

They are the persons who enter a battle to 'fight to a finish,' and the fight is never finished until they are the victors. This chin is noticeable on Andrew Jackson, who was well known as a fearless soldier and statesman.

"The sharp and prominent chin is generally indicative of an inquisitive and crafty nature. This class of people are apt to take an undue interest in other persons' affairs; you will generally discover them in gossip circles and invariably find them to be newsmongers. They are somewhat quick tempered and manifest a supersensitive nature. They are painstaking investigators, delighted to pry into social matters; they are natural-born detectives and gratify themselves most decidedly in shadowing the suspicious people of the vicinity. The eminent Frenchman, Cardinal Richelieu, approaches this character.

"The receding chin betokens that the owner lacks executive force; want of courage is his failing. These people have no mind to their own and are completely under the subjection of some trusted friend. When this chin is accompanied by a short upper lip, and the forehead is receding, it is a safe criterion of weak-mindedness. George III of England may safely be classed as typifying his character. His retreating chin and forehead and the partially open mouth are familiar to all students of history. President Tyler gave evidence of a similar nature. The chin and lower jaw are inseparably associated in the study of the lower third of the face. They contribute very liberally toward giving an expression to the upper two-thirds of the countenance and are the seat of many characteristic symbols. There are three varieties of shapes common to the inferior maxilla, which are deserving of our attention. These are the angular jaw, the round or bulldog jaw and the infantile jaw. The angular jaw is so-called on account of the acute angle which is formed by the union of the ramus and the body of the maxilla, and it is surprising how few matured individuals present this well-proportioned jaw. This jaw is most common in men and it is an earnest indication of firmness and determination. Men with this jaw often pursue their ends with a reckless, yet stern disregard for their physical welfare; nothing can turn them aside from their purpose, and they attain their success by means of their great energy, perseverence and endurance, rather than by forethought or deep scheming. They

are men of the field rather than of the chamber. They are observers rather than thinkers and know no word like fear. Their will power is most active and they are the acknowledged leaders in the sphere of active life. As speakers they use strong expressions, emphasize many words and talk to the point. They have no time for sentiment; scarcely appreciate fine art and laugh at the jingle of poetry. To them this is 'a matter of façt' world with no time for rest. Their motto seems to be 'to do or die.' The great Roman, Julius Cæsar, had such a jaw and his life of conquests bears witness that he was true to his nature. The round or bulldog jaw is usually seen on persons of pugilistic tendencies, though it is quite common to the stern business man. It portrays a tenacious, selfish and decisive character. These people are of an antagonistic disposition, finding great pleasure in wielding their power of 'fists' against some opposing human force. The prize fighter's countenance is too clearly seen by your mind's eye to need further description. The late Mr. Cleveland bears a most striking resemblance of this face.

"The 'infantile jaw,' as Dr. Oliver Wendell Holmes named it, is designated thus from its analogy to the undeveloped jaw of the infant, having an obtuse angle. People with this jaw exhibit sly and fox-like propensities. They have great will power, but very little courage. They prefer to command circumstances rather than men. They are reserved in the expression of their feelings; they keep their affairs, plans or designs to themselves; are discreet and delight in concealment. They have mysterious, tricky, deceptive, and shrewd methods in performing any task. If, when engaged as generals, they are inclined to practice strategy, they much prefer indirect approaching to a straightforward or open field encounter.

"In concluding this paper permit me to remind you of the importance of a fair understanding of the various characters which reveal themselves on the human face, and to impress you with the fact that the investigating and searching elements of the coming generation will devote a liberal portion of their time in their attempt to solve the inviting mysteries of psychology, physiognomy and other correlated subjects; the mental as well as the physical characteristics of man will engage the undivided attention of the rising generation and the wonderful deductions which are yet to come to

light relative to mental phenomena, will be as profound as any discoveries ever made.

"Matters foreign to the peace and general welfare of our race can claim but little of the coming scientists, for man is awakened to the truth of Pope's remark. 'The proper study of mankind is man.' And the dentists and physicians cannot remain dormant or regardless to this great truth if they hope in fact to be the benefactors to suffering humanity."

Dentists should observe the constant changes as well as note the staple and underlying elements of human expression. Let the student feel that faceology is thoroughly related to the success of dentistry.

SPECIAL CONTRIBUTIONS.

TALKS ABOUT BUSINESS BUILDING.

BY A. F. SHELDON.

Formulator of the Science of Business Building and Editor of *The Business Philosopher.*

TALK NO. 1.

By the term "business-building" I mean the art of securing permanent and profitable patronage.

Right there success in life, commercially, hinges. Think that over well.

For the sake of emphasis, let me state the same truth again this way: Success in life, commercially, hinges on business-building, the art of securing permanent and profitable patronage.

It is true of the employer. It is true of the employe. It is true of the professional man. It is true of everyone engaged in useful effort. It is certainly true of those engaged in dentistry.

Everybody engaged in useful effort is engaged in business—in busy-ness, and his money-making power depends upon his power to secure permanent and profitable patronage.

Make this, then, your mental sun-glass, with which to focus things; make this the target at which you aim; make this then your daily slogan, "I will develop my art of securing permanent and profitable patronage."

To do this start out by bearing in mind that you are a salesman; realize that you actually have something to sell.

If a bookkeeper or stenographer, you are selling your services; if selling dentistry you are doubly a salesman.

First, you are selling the product of the house you represent, to the buying public.

Second, you are selling your own services to the house you represent.

It will be a blessed old day in the world of trade when everybody wakes up to the fact that he is a salesman; and that the price

he gets for his goods, even though the goods be service, is potently influenced by one of the same laws that so largely regulate the sale of merchandise: namely, that the price is very largely regulated by the quantity and quality of the goods delivered.

"I'm not paid for doing that," never made good goods in the way of service.

"I'm earning my salary now, and I'll be blessed if I will do any more," never brought a raise.

The man who is always looking to see how little service he can render, never becomes a master salesman; and that's what every man in the commercial world today should strive to be—a master salesman; for a master salesman is a master business-builder, and the master business-builder is the architect of a nation's commercial greatness.

Thus you see that those who dwell on the mental plane of doing as little as they can for their wages forget that the man who never does more than he is paid, is never paid for more than he does.

Let this thought sink deep into your mind, if you strive for success in the commercial world, the doers are the money-makers—become the captains of industry, the master merchants; but the "shrinkers" and the "work-dodgers" are the "down-and-outs," the "might-have-beens" that never were.

WHAT ARE YOU IN BUSINESS FOR? WHY ARE YOU WORKING?

We have seen that in final analysis everybody engaged in useful effort is a business-builder. He has a business of his own to build. To do that, he is selling something—service or something else.

This series of articles must be eminently practical from a business point of view. However, in a broader sense this series of articles should appeal to all workers in the vast field of commerce, or—to change the figure—to those who have set sail upon the sea of commerce, since each one is sailing for or wants to sail for the same port—success.

Let us be real plain about it: We all want to achieve financial success. Of course real success includes more than that, but it does include financial success.

As the prime object of human existence is the attainment of content—happiness—in the broad sense of that term, I have but little sympathy with those idealists who say that money has nothing

to do with happiness. Personally I do not believe it is possible to be broke and happy at the same time. If you do, you are an exception to the rule.

To you, then, who are engaged in that particular branch of the world's commercial work known as dentistry, I ask these questions:

First, In what direction lies the harbor of financial success?

Second, what power propels your craft?

Third, what are your chart and compass?

Before you answer these somewhat abstruse questions, I want to ask you again, Mr. Employer, this question: What are you in business for?

Of you, Mr. Employe, I would inquire this: What are you working for?

Did I catch your answer correctly, and, written out, does it read: "To make money"?

Let me ask each of you the same question in a little different way: What is the object of the existence of that commercial institution of which you are a part?

Is your answer the same as before? Did I hear you say: "To make money"?

If I have caught your answer correctly, then I want to say this:

You are not headed in the right direction for the Harbor of Financial Success. Your motive power is not good. Your chart and compass are out of order. Your craft will not arrive at the desired destination, except the chance wind of favorable fortune should drift it there. You will not reach it by that kind of navigation.

Now, don't jump off your chair, nor tear your hair, nor swear; neither believe this "hot air." be fair. Wait till I finish this thought.

If you want more gold leaf of the manufactured kind, what do you do?

Can you get the manufactured gold leaf by going directly after the real thing? Or are you obliged to think about the ingredients which brought together make gold leaf, and then really do something to bring them together?

You are obliged to get back to cause—the things, which combined, make the effect, the result—the gold leaf.

It is just so with this commercial success business—this financial affluence question.

Money doesn't "make" itself. It has to be "made."

And the necessary ingredients for making money may all be summed up in one word—"service."

Service—the open sesame, of the gates of success:

Service—the bugle-call of high endeavor.

It is the most potent word to my mind that man has ever coined—service. Study what it means, and you will think so, too.

Certain ingredients are cause; gold leaf is effect. Service is cause; money is effect.

Correctly combine large quantities of the right kind of ingredients together and you get much gold leaf.

Mix enough of the right kind of deeds (the things you do), and the right kind of words (the things you say), and you then render great service, and the natural result is—more profit to you.

The profit you make, is the pay you get for the service you render.

Are you aware of the fact that ninety-five per cent of those who set sail on the sea of commerce fail to reach the Port of Financial Success?

Startling—but true. Why?

There's a reason.

There is always a reason why this man wins, and that man fails.

Ask the next one hundred persons you meet the question, "What are you in business for?" you will get the answer, "To make money" from at least ninety-five per cent of them.

That's the reason for their failure.

When ninety-five out of every one hundred can knowingly and understandingly say, "I am in business, or I am working to render service"; when they can say that honestly, meaning every word of it, then the statistics will be gloriously reversed—ninety-five per cent will win. For ninety-five per cent can win, if they will render the world the service that the world needs.

We must get back to the law of cause and effect in the world of business.

Fire is cause, heat is effect. If I want heat, I build a fire.

Service is cause; money is effect.

If I want the heat of money, the warmth of profit, the enjoyment of more pay, I must build a bigger fire of service.

So must you—you who read this. So must every man who would be a business-builder, and a money-maker.

No one can escape the law of cause and effect.

There are thousands of employes ruining their eyesight looking for more pay. They get so close to the log of "more money" that they can't lift it. If they would look for more ways to render greater and better service they would soon make a lever that would lift the log.

There are thousands of corporations (composite salesman) also are looking longingly for dividends to increase. They are so close to their business that they can't see it.

Quit worrying about dividends, and become more active in the use of your constructive imagination, figuring out ways and means to solve the problem of rendering more prompt and more efficient service in every way, then the "more dividends" question will take care of itself.

There is one more question I want to ask in this article—but it is a most important one. It is this:

Who are the salesmen in the world of commerce?

We have seen that in the broadest possible sense, everyone is a salesman, but we are narrowing the question right down to commerce in the technical sense of that term, when we ask,

Who are the real salesmen of the world?

Think it over, and have your answer ready, and I will give you the answer that appeals to me as being the correct one in talk No. 2, which will appear next month.

DENTAL INSPECTION.

Bad Influence of Bad Mouths on Students—Why the Child Needs a Healthy Body.

(This splendid report from a superintendent of public schools is deserving a place in dental literature.—Editor.)

BY F. M. BUCKLEY, SUPERINTENDENT OF SCHOOLS OF ANSONIA, CONN.

At the December meeting of the Board of Education the matter of dental inspection of the children of the public schools of Ansonia was referred to me for investigation and report. Since the subject

is one that is somewhat novel in this vicinity and neither the need nor the scope of it fully understood, I shall take the liberty to set forth the subject somewhat in detail.

Recent investigation of the important and far-reaching subject of the conservation of natural resources has set out in bold prominence another subject even more important and far-reaching and closely allied to the first, namely, the subject of the conservation of human vitality. How to preserve and lengthen one's life and in consequence the life of the people as a whole is even more important in the scheme of reaching the goal of "national efficiency," the aim of President Roosevelt, than the conservation of lands, forests, minerals and water. It is true, of course, that human health has been the subject of research for many years, but greater emphasis has been given to the practical application of medical discoveries at the present time than at any other time in the history of civilization. This is probably due to the marvelous nature of the researches in medical and sanitary science that the Nineteenth century gave to the world. Jenner, Semmelweiss, Bodington, Koch, Lister, Metchnikoff, and a host of others blazed the trail in the cause of preventative medicine, and in consequence the medical profession of the present day in its treatment of the various diseases is plainly verifying the dictum of Pasteur: "It is within the power of man to rid himself of every parasitic disease." Accordingly, the present generation is beginning to learn and will realize more thoroughly as time wears on that the fatalistic idea with regard to contagious and infectious diseases is absolutely erroneous and that many of the so-called unavoidable diseases are positively preventable. It is not true that each individual must run the gamut of measles, scarlet fever, whooping cough, diphtheria, tuberculosis and the like if proper precautionary measures be taken at the outset. Sunshine, fresh air, wholesome nutrition, exercise, rest and the hygienic mode of living are far more effectual than all the subsequent medication in existence.

The national government in behalf of the betterment of human vitality has been productive of excellent results in many directions. Allow me to enumerate a few items that appeal directly to a school man. (1) It has emphasized the practical nature of the discoveries of the past, particularly of the Nineteenth century. (2) It has sought

for a more insistent observance in practice of these discoveries in modern life. (3) It has served to educate laymen in medical and sanitary science. (4) It has revolutionized the study of physiology in the schools and colleges and lays particular stress upon hygiene and sanitation. (5) It has led to legislation concerning inspection of school children and school premises as well as legislation for fewer working hours and hygienic condition in factories. (6) It has led to the formation of many departments of health, and ultimately it will lead to the establishment of a national bureau of health. Sanitary science is one of the most helpful and necessary studies for adaptation to present day environment, and not the least important item of sanitary science is oral hygiene with which dental inspection is specifically concerned. In seeking dental inspection, therefore, I wish to say that I am urging attachment to a national movement in behalf of more hygienic living.

It is quite possible that there are many well intentioned people who do not favor dental inspection of school children, but I feel sure that their objections are based upon a misconception either of the need or of the meaning of the subject. To those who are familiar with the conditions that obtain in this city as well as in many other cities the need is plainly evident. It is found in the first place in the general defectiveness of the teeth of school children and the general ignorance regarding the evil consequence of this defectiveness, and in the second place in the direct relation existing between the condition of the teeth and the physical and mental condition of school children.

At the outset it may be necessary to say that I do not presume to speak upon this subject with the finality of a dentist or of a physician, but merely as a school man who has given this subject a vast amount of examination and thought with a view of safeguarding the physical welfare and promoting the mental efficiency of the school chilrden who are under my charge. I may also be permitted to say that I wish not to exaggerate the importance of dental inspection, for it is perfectly evident that there are various other organic disturbances that militate against the good health of school children, among which are poor eyesight, poor hearing, hypertrophied tonsils, adenoids and the like. It is planned, however, to take care of these last mentioned defects by an enlargement of the scope of

medical inspection. My plan is simply to give this subject of dental inspection the importance to which it is so eminently entitled by carrying on a campaign of education among the children of today who will be the citizens of tomorrow.

The medical inspection of the school children of Ansonia which was established primarily for the purpose of safeguarding the school children from contagious and infectious diseases and concerned itself almost exclusively with this commendable object, has served, nevertheless, to emphasize the following important considerations regarding the health of the school children: (1) Caries or decay of the teeth is the most prevalent disease among children. (2) It is estimated roughly that over 60 per cent of the school children of Ansonia have decayed teeth. (3) It is estimated that over 50 per cent of the school children of Ansonia take no care whatsoever of their teeth. (4) A large number of children have been absent from school through illness and many have been retarded in their progress at school by reason of defects that can be traced directly to decayed teeth.

In this respect Ansonia is but repeating the experience of other cities. Where dental inspection has been introduced statistics have been compiled and the following are of interest: In Cleveland out of 33,000 examined, 77 per cent were found with defective teeth; in Boston, 75 per cent; in Atlanta, 60 per cent. In Chicago, out of 123,897 children examined, 63,000 had physical defects, and of this number 44,000 had defective teeth. In Princeton, Ind., 76 per cent of the children examined had defective teeth, and 72 per cent took no care of their teeth. Other facts brought out in the last mentioned examination are both valuable and interesting. The teeth of the girls were found to be in slightly better condition than the teeth of the boys. The teeth of the children in the fifth grade were better than those of the children of lower grades and of the sixth grade. The children of the seventh and eighth grades had fewer dental defects than those of the lower grades. The poorest teeth were found in the children of the second and third grades. This is undoubtedly explained by the fact that at this period of life the deciduous or first teeth of the children give way to permanent ones. Various other towns and cities have adopted dental inspection, among which might be mentioned the following: Rochester, Schenectady and

Binghamton, in New York; Elizabeth and Plainfield in New Jersey; Cambridge, Hudson, Monson, Winchester, Wareham, in Massachusetts; Augusta and Brewer, in Maine; Portsmouth in New Hampshire; Waterbury in Connecticut; Pawtucket in Rhode Island; Philadelphia and Reading in Pennsylvania; Knoxville, in Tennessee; Jackson, Three Rivers and Ypsilanti in Michigan. Reports from these different places are just as replete with facts regarding the surprising prevalence of decayed teeth in school children.

Now, what is the significance of all these dental defects? It may be set down as fundamental that one of the most valuable assets in the life of the individual is the possession of a healthy body. There is also, it seems to me, universal agreement upon the proposition that the brain to functionate properly must have healthy organisms as a physical auxiliary. Very little mental progress can be made by pupils of weak physical constitutions, for best mental effort is almost invariably conditioned upon the possession of a healthy body. From Juvenal's time to the present *"mens sana in corpore sano"* has been a prominent tenet in pedagogy, but strangely enough it has remained for the present day physicians and educators to give actual outward expression of this self-evident truth. On at least this point the attempt has been made to square the practice with the preaching.

It goes without saying that the merest tyro in experience can see readily the relation of bad teeth to the general health of the body. It does not require much demonstration to show that a person with decayed teeth can not masticate properly. Nor is a very intensive study of prophylaxis required for the understanding of the demonstrable truth that unclean teeth laden with bacteria are frequently the sole source of the infection of the stomach. Bad teeth mean poor digestion, poor digestion means poor assimilation, poor assimilation means poor health, and need I say that poor health means poor progress in school studies—a weakened mental efficiency?

Nor is this all. It is important to remember that all infectious diseases are due to living organisms known collectively as germs. Germs are both harmful and harmless. Bacteriology, however, shows that while the harmful germs are not many in number, still they are extremely virulent in character, and that when conditions are accurately placed for their propagation and dissemination, they at-

tack the tissues and infect the cells of our bodies. Now, one of the greatest dangers from bad teeth is that they serve as a natural incubator for bacteria. The decomposed tissues of bad teeth, the formation that goes on in the mouth and the natural temperature of the mouth furnishes a culture medium that serves admirably for the multiplication and dissemination of bacteria. Dr. Evans, the health commissioner of Chicago, who is as well known in Illinois as is Dr. Gulick in New York, says bad teeth is not so much the pain that they cause as the evil effects that they produce.

"The major harm," he says, "that is being done is from those children who have decayed teeth, these decayed teeth being harbingers of bacteria that slowly poison, and as a result of that slow poisoning there is in many instances enlargement of the neighboring glands and these glands serve as vicarious sacrifices protecting the rest of the body from the invading poison." In this connection Dr. Evans cites an interesting experience. He points out that the effects of the Chicago Board of Health to run down an epidemic of diphtheria in a Chicago school were unavailing until the physicians resorted to an examination of the noses, throats, tonsils and cavities of the teeth of the children of the school. The result of the examination was that diphtheria bacilli were found in the dental cavities of several children who while not sick themselves "were capable of inducing sickness in others." On this score other examples might be given, but sufficient has been said, it seems to me, to show that decayed teeth are by no means conducive to the health of the individual or to the safety of the public.

The importance of the mental phase of this subject is evident from a consideration of the foregoing remarks upon the relation of the teeth to the physical organisms. Good teeth are necessary for good health and good health obviously is necessary for the proper functioning of the human brain. This is the general underlying principle. Indeed, examinations carried on by Dr. Gulick of New York City show that children with decayed teeth are, on the average, retarded six months in their progress in school. Statistics also compiled by Mr. Howell Chency of the State Board of Education on the relation existing between physical defects of school children and their retardation in the grades show conclusively that children who are retarded are almost invariably defective and that among the most

important defects are decayed teeth. On this extremely interesting side of the question an investigation is now in progress in the city of Cleveland, where dental inspection and a dental clinic were established some time ago, and the result of this investigation is awaited with positive interest by schoolmen and other interested citizens everywhere through the United States.

The question naturally arises at this point as to the manner in which dental inspection should be carried out. The entire subject may be worked out in fullest detail by the local dentists in consultation with the health officer, but dental inspection, in my opinion, is simply this. The work should be done by dentists under the supervision of the local health officer. These dentists, who might possibly give their services free as they do in other cities, should examine the teeth of the school children and report on triplicate blanks to the parents, the school officials and Board of Health the results of their examinations. Ordinarily the blank of administration that is used consists of a diagram of the upper and lower sets of teeth, both deciduous and permanent, whereon may be marked in ink the exact tooth or teeth found to be defective. This blank also usually contains some pertinent points regarding the care of the teeth. The work of the examining dentists in no way conflicts with the duties of the family dentist. The examining dentists do not treat the defective teeth found but simply examine the mouth and teeth of the children and report the condition of these to the parents who are, of course, not only free, but urged to secure for the child the proper treatment from the family dentist.

When the matter of dental inspection was proposed at the December meeting of the Board of Education the question was raised with regard to the infection that was remotely possible from dental instruments. This is a matter upon which I have taken the greatest pains to secure professional opinions from the highest authorities in the country.

Accordingly, I wrote to Dr. Gulick of the Department of Hygiene, Carnegie Friedham, New York City, who has made a thorough study of medical and dental inspection; to Dr. William C. Evans of Chicago, commissioner of health, who was the principal speaker at the opening of the national campaign of oral hygiene at Cleveland, Ohio; to Herbert W. Conn, Ph. D., State bacteriologist of Connecti-

cut, and to several prominent medical and dental authorities of this state. All of these men are unanimously of the opinion that there is absolutely no danger of infection in the dental examination of school children if the precautions that are ordinarily taken in private dental practice be employed in the proposed dental inspection. The use of several mirrors, tongue depressors (a new one for each child if necessary) and a strong antisceptic solution for dipping the mirrors—these constitute the necessary equipment.

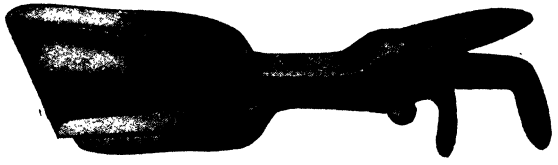
Wherever dental inspection has been introduced—and it is gradually being regarded as a necessary part of school administration—the greatest sanitary precautions have been adopted. Locally the same emphasis will, of course, be placed upon these sanitary measures. And the results of the inspections have been most beneficial in that children take better care of their teeth, parents provide dental attention for their children when necessary, and the general health of the children who care for their teeth is raised quite appreciably. Where dental clinics have been established the results are even more gratifying. There is then noticed an increased attendance at school and an advancement in general scholarship. At the present time it seems to me that Ansonia would be satisfied merely with the dental inspection, for by this system cleanliness of the mouth and teeth would be promoted and those parents who do not now realize the necessity of the care of the teeth of their children might be persuaded of the importance of raising the physical and mental efficiency of these same children by the adoption of the means suggested. If it would seem advisable to establish a clinic at a later date the matter could readily be taken up at that time.

PROPER ANTAGONISM OF THE SUPERIOR AND INFERIOR DENTAL ORGANIZATION.

BY B. J. CIGRAND, B. S., M. S., D. D. S.

The problem of the proper antagonism of the superior or inferior dental organization has engaged the profession for many years.

The great disadvantage which we have had in the past was the fact that the artificial teeth require considerable alteration after they are placed in the mouth for the first time. Of course the dentist will tell you, "use the face bow" and you will never go astray on the set up. Well not all dentists will take the accurate or long route to success; there are a few, just a few, who wish a short cut to the goal. The two reasons for this is the equation of time involved in construction and the financial reward. Heard a dentist say, "I do just as good work regarless of compensation. I make it a



rule to do my work perfectly and let the price follow." Sounds good —regret to waste the ink of both pen and type to publish such a remark, as the facts are that the average sane man in any given field of work expects his pay for work done.

In days gone by, the writer has avoided the turning down of the molars by simply regulating this difficulty when pressing down the rubber when in the dental flask. By pressing the flask tight at the molars and leaving it slightly loose at the anterior teeth you overcome this required change. But Dr. I. A. Burnett of Chicago has recently invented an appliance which will, if properly used, give the desired results. He writes:

"First, soften the bite wax, after which place a quantity (not too much) on the palatine or upper side of tray. The operator's position should be at the back and a little to one side of his patient. Place the tray in the mouth and press to place as you would in

taking an ordinary impression, being careful not to place heel of tray any farther back in the mouth than the place occupied by the twelve year molar. Do not force the tray up too far, just enough to avoid cutting the wax through. Should this occur, try again. It will help you, and make it easier to mount your plaster casts. See that the tray is placed in the mouth straight, the handle being in direct line with the median-line of the patient's face. Now remove the tray and immerse in cold water long enough to harden the wax. If you have used too much wax, trim off the excess. It will be easier to replace in the mouth when you proceed to take the bite, or impression of the lower jaw.

"You now have the impression of the upper jaw and a hard, unyielding base for the lower jaw to bite against. It also occupies little space when replaced in the mouth.

"You are now ready to take the true bite. Follow these instructions and you cannot possibly make a failure.

"Proceed by placing soft wax, not too soft (semi-soft), on the lower side of tray. (The amount is usually less than is required for the upper side.) Mould it nicely to tray, not too much bulk. That would make it harder to re-insert the tray in the mouth and you would get no better results.

"Re-insert the tray, making sure that the upper impression is in the same place as when you first had it in the mouth. Now draw the lower part of tray forward. This is done by engaging the forefinger on trigger. Hold in that position and have patient close the jaws lightly, just far enough to get the (lower) teeth or gums slightly imbedded in the wax. Now proceed by releasing the trigger, placing your thumb on the lever and instruct the patient to swallow, and bite quite firmly. At the same time the jaws are closing, force the lever down slowly consuming the same time the patient does in making the bite.

"Remove your tray, cool the wax and trim it on both upper and lower sides to shallow impressions. You are now ready to fit your plaster casts. Make your fit accurate, then wax them to place, using sticky wax and mount on the articulator, after which proceed as usual.

"To clean and sterilize, place the trays in boiling water for a few minutes, dry and polish with a clean towel or napkin."

The facts are, the profession is setting up and taking notice

along all lines. Let us have other ideas along this line. There is room for invention.

Of course it also depends on the character of the articulator as to whether you have success with the antagonism. If the articulating frame opens above the line of occlusion you will be compelled to grind

down the cusps of the molars. But if the line of the articulator is on a line with the occlusal surfaces of the inferior teeth you will not experience any difficulty in that direction, as you have copied nature in a precise way.

Much study and further research is necessary to attain exact results.

DENTAL ANESTHESIA.

BY E. L. C., CHICAGO, ILL.

So many accidents have occurred while patients were undergoing anesthesia in the dentist's chair, entailing obloquy and serious pecuniary loss, that anything that promises superior safety, without sacrifice of efficacy, must be considered by our profession: With us also the sole question is utility. We do not ask if the remedy is fashionable, whether the device belongs to the party that happens to be "in" at the time, whether the remedy is or is not patented. We can not afford to do without things better, or safer, or pleasanter, than what we are now using, or to leave them for our competitors. But we must secrutinize the claims made with cold impartiality, discriminating between real merit and the manufacturer's desire to sell his goods, plus printers' ink.

In this spirit we might investigate the claims made for the Abbott anesthetics. The hyoscine, morphine and cactin tablet has been praised and blamed in medical circles, and current opinion is not yet settled. One party declared the method dangerous. H. C. Wood, Jr., tabulated several thousand cases from which he deduced a mortality of 1 in 221 administrations. These figures were taken from European sources largely, and the "hyoscine" employed was from the scopola and properly termed scopolamine. Dr. Abbott employs in his H-M-C tablets only true hyoscine from hyoscyamus, being suspicious of scopolamine from the heavy mortality reported. He states that he has issued more than ten millions of these H-M-C tablets, and has been able to collect only eight deaths, that could have been caused by this anesthetic combination. Applying Wood's computation there should have been over 40,000 deaths for ten millions of tablets. Making every possible allowance, it is difficult to explain the discrepancy in any other manner than by Dr. Abbott's contention, that there is a difference between true hyoscine and the alkaloid from scopola.

The use of these tablets preliminary to chloroform does away with most of the dangers of the latter and reduces the quantity needed to a fraction. Many times the H-M-C suffices without any other anesthetic. By the aid of a single tablet I have been able to remove

nerves from tooth roots painlessly, and to work upon sensitive dentine at ease to myself and patient. In some cases I added a very little chloroform, possibly ten drops, but of late I have preferred another plan.

My success with the H-M-C gave me such confidence in the Abbott house that when it announced a local agent, anesthaine, I was ready to give it a trial. It is preferable to cocaine, because the latter only anesthetizes the gums after it has been injected into them with the needle. Apply anesthaine on lint for three minutes and you can then inject the gums without the patient's knowledge. True, the pain of piercing the gums is a little thing, but the dentist who does not take the trouble to save his patient even a little pain, may be sure the latter will quickly hear that his competitor does so, with results that need no telling. There are people who would face a fiery dragon, yet turn pale at sight of the dentist's tool tray.

Anesthaine does well alone for brief jobs. For longer work it is best to inject an H-M-C tablet an hour before operation, and then apply the anesthaine. Since commencing the use of these in conjunction, there has been scarcely a case where chloroform was also needed. I'm not caring much if I never see that treacherous ally again.

AN ODE TO A MOLAR.

F. E. CLOUD, D. D. S., NEW YORK CITY.

Farewell, old tooth, a long farewell to all thy former greatness.

Many years have we traveled together over the rough and stony roads, through the journey of life.

Through sickness and health, pleasure and pain (the latter so far as you are concerned), we have stuck it out, or rather in together. We have brothered it for many years, but, swollen with the knowledge of the secrets you possess, good, bad and indifferent (perhaps very little of the first), you have tried to become my master and at times you have succeeded. With what patience I have put up with your prowlings and grumblings!

In your pride and greed you have cried for gold—yes, in your ravings you demanded a crown.

You have kept me awake nights trying to soothe you, but you would not until my patience tried beyond endurance, my usually angelic, lamb-like disposition busted to smithereens, and I was forced to give you up, to divorce you from the home in which you were born.

And now, good bye, and when laying in the debris of the street, or the sewer, it may dawn on you to contrast your present surrroundings with those you have left.

Ingratitude has its reward, repentance—if such you feel, comes too late.

In this case it is not what God has joined together let no dentist pull assunder, but let her rip.

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THE OPSONIC INDEX OF THE BLOOD AND ITS TECHNIQUE.

BY PROFESSOR ROBERTS, M. R. C. S.

(*The Commonwealth Dental Review,* Sidney, Mar., 1911.)

The results of bacteriological research in the direction of finding an explanation of the facts of immunity have shown that the blood serum possessed properties and acquired properties that were till then unsuspected. Since the discovery by Pfeiffer of the action of an immune cholera serum upon the specific bacilli, such properties as antitoxins, agglutinins, bacteriocidins, bacteriolysins, cytolysins, and precipitins, have all become acknowledged facts. The discovery of the presence and the action of these substances in the blood was a distinct refutation of the theory of Metchnikoff, that immunity was due entirely to the phagocytic activity of the leucocyte. While Metchnikoff duly accepted these activities on the part of the blood serum, he still thought that the leucocyte was stimulated or educated by the processes adopted in the production of active immunity, so that its phagocytic power for a particular bacterium could be much increased, and also, that the leucocytes themselves were probably the source of these new antibacterial elements in the serum, which later hypothesis is probably correct in many instances. Still more recently, owing to the researches of Leishman, Sir A. E. Wright and Capt. S. R. Douglas, a new element was found to be present, more or less, in all sera, and it was found that this element was essential for the proper phagocytosis, and that according to the degree of its activity or to the amount of it present, so was the power of the leucocyte for phagocytosis influenced. In other words, that though phagocytosis can take place in a different medium, *e. g.,* physiological salt solution, it is performed at a comparatively slow rate and only in small degree. It is an evidence of the natural powers of the leucocyte in this direction, and has been called by Wright "spontaneous phagocytosis." But when leucocytes are brought into contact with bacteria which have

been, or are, at the moment, subjected to the action of blood serum, the phagocytosis becomes an extremely rapid progress, and also greater numbers of the bacteria are ingested. This, Wright calls "induced phagocytosis." The source from which the leucocytes are taken is immaterial. There is no difference in result between the white cells of a highly immune person and those of a most susceptible one. The difference in result lies solely in the quality of the serum. Thus the question of the stimulation or the education of the white cells is eleminated. This element in the blood does not make any visible change in the micro-organisms, but it appears to prepare them in some way for ingestion by the leucocyte. Thus it has been given the name "Opsonin" (I cater or prepare for). It is present in all sera, is destroyed by heating to 60° C., and is distinct from the agglutinins, bacteriolysins, etc. Its effect is exerted upon every species of bacteria, while agglutinins act on certain varieties only, and bacteriolysins on very few; but the amount of opsonic power varies in different individuals in respect to the same organism, and in the one individual to different organisms. For instance, a patient's serum may show a high opsonic power for the staphylococcus, and a reduced power for the tubercle baccillus, or *vice versa.* The utility of this discovery lies in the possibility of estimating, by certain methods, the opsonic power in a given serum to a specific bacterium, by comparing it with that of a known normal serum to the same bacterium, and then, if found to be deficient, to raise it by repeated injections of a vaccine till it becomes equal to, or higher than the normal standard. The power of the serum to induce a phagocytic response is termed the opsonic index. After the injection of a vaccine, the opsonic index falls (called the negative phase), it then, at varying intervals with different bacteria, commences to rise (positive phase), till it reaches a degree which is higher then it was originally at which it remains for a period (high tide), it then begins to fall again (back flow). If an injection is repeated during the negative phase, the index is much further lowered, and the effect may be disastrous. This explains the disappointing results of the old tuberculin injections when they were first employed too frequently and in too large doses. But if subsequent injections are given during the positive or high tide phase, a much increased opsonic power is gained for the serum. Thus, by careful examination from time to time, can a scientific and well-

timed repetition of the injection be performed, and a good result obtained. From the investigations of Wright and others, certain generalizations have emerged:

1. If the bacterial infection be strictly localized, the opsonic index of the blood as concerns the particular bacterium causing the infection, is below normal. Thus, the blood of a patient suffering from furunculosis will show an index to the staphylococcus of about half that of normal, or suffering from tuberculous cervical glands, of a little more than half to the tubercle bacillus.

2. The second generalization shows that individuals the subject of a systematic infection, such as an acute pulmonary tuberculosis, possess either a high opsonic power or one fluctuating from high to low. Wright believes this fluctuation is due to repeated auto-inoculations from the patient's own focus, and equals negative and positive phases. Of course, in this case, or both, and for this reason are ineffective or even harmful.

Wright terms all the anti-bacterial elements in the blood "bacterio-tropic" elements, in the sense that they turn towards and enter into combination with elements of the bacterial body. The localized focus of a bacterial disease is low in these bacterio-tropic elements, partly for the reason that the blood throughout the body contains a reduced amount, and from the fact that bacterio-tropic substances are absorbed whenever the blood fluids come in contact with the bacteria, and also, in the case of foci that are cut off from the blood stream, *e. g.,* tubercle, the conveyance of bacterio-tropic substances to the focus of infection by the lymph stream can seldom keep pace with the above absorption. This last fact is well exemplified in the case of tuberculosis peritonitis, where it has been shown that the ascitie fluid has a much lower opsonic index than the blood itself, so that the bacteria developing there are not exposed to the full bacteriotropic power of the circulating blood. This seems to explain the success which so often attends laparotomy in these cases, by the replacement of a stagnant lymph by a more powerful fluid freshly derived from the blood, richer in antibacterial substances. Also the success which follows treatment in some cases, by the Bier hyperaemic method, or by massage, poultices, etc., is in like manner explained by the bringing to the focus larger quantities of more or less bacteriotropic lymph. The results of the treatment by vaccines, based on the con-

ditions found by estimating the opsonic index, have been sufficiently satisfactory for this method of treatment to be considered as a most powerful weapon in our hands against certain infections. There is also the special advantage that, in some cases, the patient can be inoculated by bacteria cultivated from his own diseased focus, or from his own blood and in the case of the streptococcus, of which there are many strains, this is of importance, though it is of importance in all cases. In the case of pulmonary tuberculosis, it is probably the early cases that would be the most likely to receive benefit, and here the vaccine treatment becomes a valuable adjunct to those methods of fresh air, hypernutrition, etc., which have already yielded such good results.

I will now describe briefly the:

TECHNIQUE.—In order to test the opsonic power of a given patient's serum, certain requisites are necessary:

1. A small quantity of the patient's serum.

2. Leucocytes from any human blood, washed free from the plasma, and separated from the red cells.

3. An emulsion of the particular bacterium in question.

4. A small quantity of the serum from a normal condition, or better still, the mixed sera from the blood of several normal individuals.

Now, the details for carrying out the technique of this process are a little complicated, and certainly require practice. It is of necessity a laboratory method and takes time. The technique varies in minor details in different laboratories, but in its main features is the same.

1. Taking the patient's blood and also the blood of the control normal individual. Prick the index finger, squeeze out a large drop of blood, receive this into a Wright's capsule, which is a short piece of glass tubing which has been drawn out at one end into a narrow prolongation, and the same at the other end, only curved to a half circle. The blood from patient and from control is received into these, incubated for five or ten minutes to hasten coagulation and then placed in the centrifuge to separate the serum more completely from the blood clot.

2. To obtain the white cells, washed free from the blood plasma and red cells, about two cc. of any human blood are collected into a

centrifuge tube, or a much smaller quantity of hoemocrit is used, and received into some 1.5 aqueous solution of sodium citrate to prevent coagulation, and rotated into the centrifuge. The corpuscles are precipitated, the white cells being the lighter remain superficial to the red. Pipette off the supernatant sodium citrate solution and replace with .75 saline solution; centrifuge again, again remove supernatant fluid, and adding fresh saline solution repeat the process. The leucocytes now well washed free from plasma, are lying in a white film superficial to the red cells.

3. The bacterial emulsion. This is prepared from a 24 hours' old subculture in the case of ordinary bacteria, but where tubercular cases are under investigation, dried dead tubercle baccilli are used. In the former instances, to obtain the emulsion the young colony is simply washed with saline solution and the test tube containing them well shaken. With the dried tubercle bacilli, a small quantity is made into a paste with very little saline solution, and rubbed between the pieces of glass and fresh solution slowly added, the object being to have as much as possible a suspension of single bacilli. The emulsion in either case is then contrifugalized to send down any clumps.

The next step is the mixing of these three solutions—the serum, the leucocytes, and the bacterial emulsion. For this purpose the opsonic pipette is used. This, together with the control pipette, is placed in the incubator at a temperature of 37° C. for fifteen minutes, both being put in and taken out at the same time. The contents are then squeezed out and mixed, and films are made on microscope slides and suitably stained. These films are then examined under the microscope and the polymorphic leucocytes in succession inspected, and the number of bacteria in each is noted down till, say, 100 leucocytes have been dealt with. The result of the count of the patient's serum is compared with that of the normal control. The count of the control slide is regarded as the normal opsonic index. Thus, if on the control slide 100 leucocytes have been counted and the number of bacteria ingested by them was also 100, this proportion of one per leucocyte is indicated by the figure 1. If the count of the patient's slide totalled 50 bacteria to 100 leucocytes, the amount of induced phagocytic activity in his leucocytes is only half that of normal, and his opsonic index is 0.5.

The treatment by vaccines, as I have already indicated, has for

its purpose the production of an increased opsonic power in the blood, rendering the destruction of bacteria by phagocytosis comparatively easy and thus raising the resistance of the patient. It is chiefly in those cases where the infection is chronic and localized, and where treatment by ordinary methods is unavailing, that the vaccine treatment becomes a potent remedy in our hands, and it is because. in these cases, the amount of toxins given out by the local foci is not in sufficient quantity to stimulate opsnin production. The vaccine supplies this stimulus, and so by commencing with small, and continuing with increasing doses a favorable result is finally obtained. As I have said, an important factor in the success of a vaccine treatment is that the bacteria which are to form the vaccine should be obtained from a focus of the patient himself. If this can be done the result is much surer. If it cannot be done, stock vaccines of the bacterium supposed to be the cause must be used. The only exception is in the case of tuberculosis, where tuberculin is employed as the vaccine.

Now, before using a vaccine, it is no doubt scientifically right and correct to first test the opsonic index of the patient, and in a case of mixed infection, it is important to take a separate index for the different infecting micro-organisms and use a vaccine containing those to which the index proved lowest or perhaps higher. But, now, fortunately in many cases, we can often dispense with this test, as experience in opsonic work has taught us the average length of the negative phase following various bacterial injections, and, therefore, the approximate intervals at which to give the injections, so that if we are careful to begin with doses small enough not to produce clinical symptoms we are within safe limits. Now, among dental diseases, there are not many that lend themselves to treatment by vaccines, but it may be said that all those that are associated with chronic suppuration would be likely to be benefited. Amongst these there stands out prominently that formidable and intractable condition known as alveolar ostitis or pyorrhea alveolaris. This disease has lately received much attention from a bacteriological point of view. There is an article on the Odontological Section of the Proceedings of the Royal Society of Medecine of December, 1909, by J. W. Eyre and J. Lewin Payne, and articles by Kenneth W. Goadby in the August, September and October numbers of the *British Dental Journal,* 1907, and again

by the same author in the *Lancet* of December 25, 1909. A summary of the conclusions and results of these investigations are to the effect:

1. That pyorrhea alveolaris is, as one would expect, a mixed infection.

2. That the organisms chiefly concerned vary in different cases, but are found to be either the pyogenic staphylococci or streptococci, the micrococcus catarrhais, and occasionally the pneumococus, any of these being more or less associated with putrefactive bacteria.

3. The method of treatment adopted was the preparation of a specific vaccine from the given cases, the organism or organisms chosen for the vaccine being those which showed the greatest deviation from the normal in their opsonic index to the patient's own serum.

4. Local treatment has always to be continued, and all that can be expected of the vaccine is that it should arrest the progress of the disease and prevent further distruction of the bony tissue; but it is, nevertheless, an extremely valuable addition to local treatment, the more so as it must be remembered that the effects of this disease are not merely the local conditions but constitutional affections such as toxaemias and direct absorption and from gastro-intestinal absorption, anaemia, rheumatical arthritis, and many other conditions are associated with and arise from the absorption of the toxins produced locally and that these, often grave, constitutional symptoms disappear when the local condition is cured.

In conclusion, gentlemen, I have to add that there is, of course, nothing original in this paper. I have merely attempted to describe, in rather bare outline, the main points in regard to this important step in the study of disease from a bacteriological standpoint. To many present, I have no doubt been only going over familiar ground, and to them I must apologize. If on the other hand, there are any present to whom I have made the subject a little clearer I am satisfied. —(*The New Zealand Dental Journal.*)

NOVOCAINE, STOVAINE, AND BETA-EUCAINE LACTATE.

BY DR. W. R. GOULSTONE.

(*New Zealand Dental Journal.*)

On comparing novocaine with beta-eucaine lactate, it is seen that while the anaesthetic value is roughly about equal, the toxicity of beta-eucaine lactate is slightly less than that of novocaine. It appears, then, that while beta-eucaine lactate has only a slighter degree of toxicity to recommend it in preference to novocaine, its irrtant action far and away overshadows any such slight advantage, and novocaine is recognized as undoubtedly the better drug of the two. Finally, it only remains to compare novocaine with stovaine. The former drug is less toxic and much less irritant; indeed, its specific action on nerve fibres is so great that it has practically no destructive effect on the other tissues. Stovaine is more toxic and considerably more irritant. If stovaine and novocaine be given in doses so that their anaesthetic action is the same, both the irritant and toxic effect of the former drug, even in the smaller doses in which it is administered, are greater than the relatively larger doses of the latter. I come to the conclusion, therefore, that of the drugs which have been investigated, novocaine is most satisfactory for general use. Its anaesthetic action is equal to that of cocaine and its toxicity and general destructive power on the tissues are much less.

A NEW PROCESS OF DIAGNOSIS FOR FISTULAS CAUSED BY DEAD TEETH.

BY DR. M. PITOT.

(*L'Art Dentaire,* Bordeaux, Apr., 1911.)

It is sometimes very difficult to account for the tooth causing a gingival or cutaneous fistula.

It often happens that the neighboring teeth of the seat of the fistula are affected with chronic arthritis and one of these teeth may be the cause of the trouble in consequence of intern infection.

In such cases, we are sometimes obliged to treat all the affected teeth one after the other.

The means at hand for the treatment of such cases are not sufficiently rapid and precise.

Percussion is not always well enough defined in necrosis of the pulp having for cause intern infection, to depend on it as a means of diagnosis.

The mouth lamp and heat are very poor guides specially when the fistula is caused by a root, as they will only point out the dead teeth but not the tooth causing the fistula.

The X-ray is a long and expensive process and it is susceptible to errors or insufficiency. There is only one way which may be relied upon, it is the injection under pressure, in the diseased tooth forcing the fluid through the orifice of the fistula. But this would be a bad practice to follow in all dead teeth without previously having cleansed the contents of the roots. This requires a great loss of time.

I have been laboring of late trying to find a quicker way in making these diagnoses, and I think I have discovered it.

I do not think it has been practiced heretofore, at any rate, I never have heard of it before.

Place the end of the index along the root of the suspected tooth and slide it from the cervical margin to the apex. While perpendicular percussions are made on the tooth—provided that the tooth is not in acute stage—you will notice at a given point that there will be a choc which will be noticed by the index, phenomena which I could not describe better than comparing it to the percussion of hydrops of the abdomen.

This choc, as it will be noticed, is more or less well marked, and the variation of its intensity will enable you to establish a prognosis. In fact, after a certain period of dento-alveolo-arthritis, there is some absorption of the alveolar wall and the root at that particular point looses its firmness and it is that looseness which you feel with your finger.

The larger the alveolar cavity, the more distinct you will feel the choc under percussion the result of which you will have a more severe prognosis. This may be accomplished in such a manner as to enlighten you on the seat and the surface affected by the lesion.

The advantages of this process are numerous. No painful nor dangerous manipulations, no expensive surgical instruments, but innoxiousness, reliability and speed.

I am yet to find a case where this diagnosis has failed.—(*Bibliographie Dentaire.*)

JOURNALISTIC GEMS.

THE DOCTOR AND THE DENTIST—FROM THE DENTIST'S VIEWPOINT.

Every dentist aims to secure the goodwill of the doctors, hoping thereby to secure new patronage and have cases referred to him. While they are too politic to say so, many dentists feel that the doctors do not give them sufficient credit as scientific men engaged in a surgical specialty. As a matter of fact, dentists are required to pursue many of the studies taken by medical students, and they are in position not only to give advice upon dental matters but also to very accurately measure the scientific attainments of the doctor. Doctors forget this latter, and it will pay to get the good will of the dentist, who may refer cases to us and to whom we may also refer our cases. Dentists feel that the physicans should more fully inform themselves regarding dental science and take occasion to advise patients to attend to their teeth. The dentists are not alone in this matter, since health boards are taking up the question of the condition of the teeth of the school children, and it is well known how nutrition will suffer or the nervous system be impaired by defective or carious teeth.

Dentists care very little how many teeth the doctors extract, as it is neither a pleasant nor a profitable branch of dental work, but they do deplore the fact that many doctors do extracting in a bungling or violent manner and usually with an utterly inadequate set of forceps. When a patient comes for a set of teeth it is a matter of importance that the preceding extraction shall have been done in a proper manner. Also the unwise extraction of teeth may render impossible otherwise very feasible bridge work. Many teeth should have been saved that have been extracted by physicians. Especially is this the case with the first set of teeth. Many children go for years with gaps in the teeth contour and are unable to masticate food properly until after the eruption of the permanent set. A very trifling little operation will often preserve these teeth until they reach their natural limit, and the temporary fillings will add much to the comfort, appearance and health of the child. Let us send our

little patients to the dentist before we yield to entreaty to end pain by ending the tooth. He may save the tooth for several years. The cities, but more particularly the rural districts, are full of people who are monuments to unwise medical handling of their teeth, and it is probably no exaggeration to say that half of the sets of "store teeth" in persons under forty years of age would have been unnecessary so early in life had the teeth received proper and scientific care. Quite aside from this, foul teeth are a fertile source of constantly infected and inflamed stomachs, sore mouths, bad breath and sometimes of serious general infections.

Doctors are inclined to unload upon the dentist cases with swollen jaws or faces, and in which it would be unwise for the dentist to do any operative work until after the pus is evacuated or the inflammation has subsided. Also the doctor may inject cocaine solutions around painful teeth and the drug may set up a very ugly ulceration, which cocaine is very apt to do with the gums and the alveoli. We should be more conservative in our use of cocaine solutions about the teeth and we should not sidestep the surgical treatment of the gums and adjoining structures and push it all off upon the dentist. Much of it is our job and we should not expect the dentist to do the impossible.

We should be more considerate of the time and the engagements of the dentist and should not demand that he drop everything to attend to our cases that we could relieve until such time as he can give them proper attention. It is not fair to expect him to do unnecessary night work, under the defective illumination, necessarily handicapping him in work upon a cavity like the mouth.

Dentists are hesitating to give "gas" to female patients when alone with them. We are personally aware of two cases in which witnesses saved the dentists from charges, the result of what the patients *imagined* occurred while under the influence of "gas." Many persons have lascivious dreams while undergoing slight operations under an anesthetic. We should not believe stories told to us about a dentist without some substantial basis for them, and when we send patients to him we should relieve his mind by advising some reliable person to accompany them to the dentist's office. When we send to the dentist patients with weak hearts or that we have drugged with narcotics, we should inform him of the facts in the case.

Many persons request their physician to accompany them to the dentist in order to give a general anesthetic while the dentist extracts several teeth. Perhaps it is telling a secret, but many dentists dread to see such cases, since most doctors place the patient profoundly under ether, charge three to five dollars for the job, and walk out and leave the sick patient in the chair to recover from the anesthetic at their leisure and then complain if the dentist charges over 25 cents per tooth. We have known of cases of this character taking three hours of the dentist's time and being otherwise annoying to him.

As a matter of fact, it is seldom necessary to give an anesthetic to profound narcosis for tooth extraction. A very little chloroform is usually sufficient to render the patient temporarily unconscious of pain and he recovers in a few minutes after the work is done. Chloroform is preferable, from many points of view, to ether, in such cases but even ether suffices when very little, indeed, is given. We have known of dentists extracting under chloroform and in which the patient was able to converse in a minute or two. With such a small operation, as is extraction, we need not fear shock, sometimes induced in major surgery while partially anesthetized.

It would not hurt at all to get the dentists into our medical societies. They would learn from us and we could learn from them, and it would tend toward a better understanding all around. Let us be professional brothers to the ethical dentists.—*Medical Council.*

AN ENGLISH PHYSICIAN'S DENUNCIATION OF AMERICAN DENTISTRY.

The world has been wofully misled for many years regarding American dentistry, in the opinion of the illustrious pathologist to the London Charing Cross Hospital, Dr. William Hunter. It is his matured conviction that dentistry as practiced in this country is a curse to the world, the fruitful source of one of the most terrible scourges afflicting the physical frame of man—sepsis. In other words, dentistry as practiced by even the ablest men in the American profession, is spreading deadly maladies not only among the moderately well off, but among the very rich. Indeed, the rich are the

worst sufferers because they can afford the high price of the most skilled work.

An illustration of Dr. Hunter's meaning is given by himself in the London *Lancet*. One of the worst cases of sepsis he ever saw was brought him by a doctor who said that the patient's mouth had been "carefully seen to and was in good order." The patient was a tall, handsome man in the prime of life. His case was the severest pernicious idiopathic anemia imaginable. His mouth was to all appearance clean, for it was one solid mass of gold caps, bridges, crowns, fillings, false teeth and the like, so ingeniously built up that one could hardly tell what was false and what was real. To free that man from his poisoned state involved in consequence what was really equivalent to a major operation in surgery. The condition of necrosis, sepsis and the like revealed on removal of the golden architecture of his mouth was perfectly appalling. Doctor Hunter proceeds:

"No one has probably had more reason than I have had to admire the sheer ingenuity and mechanical skill constantly displayed by the dental surgeon. And no one has had more reason to appreciate the ghastly tragedies of oral sepsis which his misplaced ingenuity so often carries in its train. Gold fillings, gold caps, gold bridges, gold crowns, fixed dentures, built in, on, and around diseased teeth, form a veritable mausoleum of gold over a mass of sepsis to which there is no parallel in the whole realm of medicine or surgery. The whole constitutes a perfect gold trap of sepsis of which the patient is proud and which no persuasion will induce him to part with. For has it not cost him much money, and has he not been proud to have his black roots elegantly covered with beaten gold, although no ingenuity in the world can incorporate the gold edge of the cap or crown with the underlying surfaces of the root beneath the edges of the gums? There is no rank of society free from the fatal effects on health of this surgical malpractice.

"I speak from experience. The worst cases of anemia, gastritis, colitis of all kinds and degrees of obscure fever of unknown origin, or purpura, or nervous disturbances of all kinds ranging from mental depression up to actual lesions of the cord, of chronic rheumatic affections, of kidney disease, are those which owe their origin to, or are gravely complicated by, the oral sepsis produced in private pa-

tients by these gold traps of sepsis. Time and again I have traced the very first onset of the whole trouble of which they complained to a period within a month or two of their insertion. The sepsis hereby produced is particularly severe and hurtful in its effects. For it is dammed up in the bone and in the periosteum, and cannot be got rid of by any antiseptic measures which the patient or the doctor can carry out. Moreover, it is painless, and its septic effects therefore go on steadily accumulating in intensity without drawing attention to their seat of origin.

"Such are the fruits of this baneful so-called 'conservative dentistry.' The title would be a fitting one if the teeth were a series of ivory pegs planted in stone sockets. But the teeth being what they are—namely, highly developed pieces of bone tissue, possessing, I would point out, a richer blood and nerve-supply than any piece of tissue of the same size in the whole body—and planted in sockets of bone with the closest vascular relations to the bone and the soft tissues of the periosteum and the gums, the title that would best describe the dentistry here referred to would be that of 'septic dentistry.' Conservative it is, but only in one sense. It conserves the sepsis which it produces by the gold work it places over and around the teeth, by the satisfaction which it gives the patient, by the pride which the dentist responsible for it feels in his 'high-class American' work, and by his inability or unwillingness to recognize the septic effects which it produces."

After ten years' experience of the nature of these dental effects and of the difficulty in removing them from the mouth of the unfortunate wealthy people best able to afford them, Dr Hunter feels that the only solution of the difficulty is a spread among dentists of a knowledge of sepsis. The problem is a pressing one for the dental profession, its solution being of importance in the interests of public health. The civilized world beholds one branch of the healing profession struggling with might and main to prevent a poisonous condition of the human system, known as sepsis. There is in the world another great department of the therapeutic world, that of dentistry, industriously engaged in promoting the evil of sepsis. Dentistry, that is to say, ignores the fundamental truths of anatomy, physiology, pathology and the tissues generally. "To gold-cap a healthy or diseased tooth in order to beautify or preserve it is the negation

of every one of these truths (of physiology)—a veritable apotheosis of septic surgery and of surgical and medical malpractice." It is a horror of the age:

"The medical ill-effects of this septic surgery are to be seen every day in those who are the victims of this gilded dentistry—in their dirty-gray, sallow, pale, wax-like complexions, and in the chronic dyspepsias, intestinal disorders, ill-health, anemias, and nervous ('neurotic') complaints from which they suffer. In no class of patients and in no country are these, in my observation, more common than among Americans and in America, the original home of this class of work.

"The chief feature of this particular oral sepsis is that the whole of it is swallowed or absorbed into the lymphatics and blood. Unlike the sepsis of open wounds on the outside of the body, none of it is got rid of by free discharge on the surface. The effects of it, therefore, fall in the first place upon the whole of the alimentary tract from the tonsils downwards. These effects include every degree and variety of tonsillitis and pharyngitis; of gastric trouble from functional dyspepsia up to gastritis and gastric ulcer; and every degree and variety of enteritis and colitis and troubles in adjacent parts—e. g., appendicitis. The effects fall in the second place upon the glands (adenitis); on the blood (septic anemia, purpura, fever, septicemia); on the joints (arthritis); on the kidneys (nephritis); and on the nervous system.

"The sepsis here had in view is all swallowed or absorbed, and that infection which staphylococcal and streptococcal organisms carries with it certain definite and deleterious effects wherever it is found. These effects vary, naturally, with the site of the infection and the degree of resistance offered by the tissues which are the seat of the invasion.

"In the case of the mouth the mere presence of staphylococci and streptococci on the surface of the mucosa, or on the tongue, or in the mouth secretions, or in the saprophytic flora which abounds in the mouth, does not of itself cause disease, any more than their presence on the uninjured skin. But the matter is totally different when they become seated in open wounds in the edges of the gums adjacent to carious teeth; or extend from this, their first site, downwards along the periosteum (peridontal membrane) of the teeth socket. The

infection is then no longer a superficial one—it is in connection with the soft tissues, periosteum, and bone. The resistance of these tissues, especially the gums, is fortunately very great; hence a degree of infection which anywhere else in the body would certainly draw attention to itself by its redness, swelling, heat and pain, may indeed cause redness and swelling, but does not necessarily cause any pain. This is the more to be regretted, for a feature of the septic infection in the gums, the teeth, or in the sockets of the teeth is that it is infection in contact with diseased bone, and its virulence is intensely aggravated by this fact."

The patient whose mouth is a veritable mausoleum of gold work is likely to present himself in a highly poisoned condition to his physician. The victim labors under the delusion that his mouth is well cared for when, as a matter of fact, the degree of sepsis and necrosis covered and hidden by the gold is perfectly appalling. Dr. Hunter speaks from experience. He has had many such cases and he describes them in the London *Lancet* as "the most trying and pitiable cases with which one has to deal," for they are produced by dentists. The worst cases of septic gastritis, enteritis and colitis, of ill health, anemia, obscure septic fever and other manifestations of medical sepsis, are in Dr. Hunter's experience—so he avers—those in which the greatest amount of "American skill," in the shape of gold work, has been bestowed upon the mouth.

There seems only too good reason to infer, moreover, that the professional education of dentists is often of the most superficial sort. The profession is recruited in some American communities almost at haphazard. The training is frequently of the manual kind. Provided the student displays a digital dexterity in manipulation, he is not questioned too closely, sometimes regarding scientific knowledge. He goes about his work in the densest ignorance of such things as therapeutics and infection. He is no scholar and in no sense a man of science.—*Science and Discovery.*

WHO'S WHO AND WHY.

[Under this title the journal will devote some space to acquainting its readers with the presidents of state dental, and important local societies; and treat of such other distinguished dental practitioners as the personal news items merit. By this means the readers are brought into a closer relationship with the leading spirits of their profession, and a better understanding can grow out of such an acquaintance.—EDITOR.]

Dr. J. L. Malone, President of the Wisconsin State Dental Society is a genial fellow, and hails from the Chicago College of Dental Surgery. His practice is at Superior, Wis., and while he

J. L. MALONE D. D. S.

President Wisconsin State Dental Society

loves dentistry as a profession he takes most kindly to hunting and fishing as an avocation. He is a student of nature and intensely loves the wood, the lake, the river and the mountain. Few dentists in the state take the recreative pleasures with more regularity; his mid-summer vacation in on the program every season and he adheres to the sports of the wild with an unchanged inclination of a fifteen-

year-old. He has not confined his rambles to this country alone as he has frequently gone across the border into Canada and if his descriptions of that neighborly land is correct, why Taft certainly is not wrong in advocating reciprocity. In fact, Dr. Malone believes in acquiring the whole country for game purposes. The trips are not taken in a selfish way; he has friends along and uses the U. S. coin to bring up a good haul in game and fun.

THE AMERICAN DENTAL JOURNAL wishes him a continued lively career as a huntsman and thanks him for the example he sets in absolutely taking the vacation. He said: "If my profession can not afford me a vacation it certainly is a beggardly occupation." We believe he is right.

EVERYBODY'S CORNER

Dentist Injured in Runaway.—Dr. W. D. Ferrell, a prominent dentist of Cookeville, Tenn., was seriously injured June 16th in a runaway accident.

Vulcanizer Bursts; Dentist Injured.—Dr. W. Igel a dentist in Omaha, Nebraska, was severely burned May 13th when a vulcanizer exploded.

Dentist Sued.—Ostrowisky, a practicing dentist in Fresno, California, is being sued for $2,500 by Mr. H. Hamilton, who alleges the dentist pulled the wrong tooth.

Dentist Injured Playing Golf.—Dr. Harold M. Clapp, a practicing dentist in Utica, New York, was injured May 15th while playing golf. He was struck by a golf ball. His condition is not serious.

Dentists to Advertise.—Kansas dentists have begun a campaign of education along the line of taking care of the teeth. Each dentist in the state will be assessed $2.00, but no personal advertising will be permitted.

Dentist Injured in Motorcycle Collision.—Dr. B. A. Widup, a dentist in Columbia City, Indiana, while riding a motorcycle at a speed of thirty miles an hour, collided with an automobile and sustained a fracture of the left leg, a cut on the throat and other cuts and bruises. His condition is serious.

Many Tints in False Teeth.—Pearly teeth are not the fashion everywhere, according to Donald C. Mathews of Dundee, Scotland, who is interested in the manufacture of artificial teeth. There is a steady demand for black teeth in Siam, Batavia and Burma, where the natives chew the betel nut, which blackens the teeth. For Persia the teeth must be absolutely white. Mr. Mathews states further that recently he has received an order for bright red and blue artificial teeth.

IN MEMORIAM.

Dr. Charles H. Magoon, a practicing dentist in Wakefield, Mass., died May 31st. He was seventy years old. His wife survives him.

Dr. O. F. Brightfield, a well known dentist in Belleview, Illinois, died recently. He was 54 years of age and is survived by a wife and two sons.

Dr. Cyprian C. Cross, a prominent dentist of Woodville, Miss., died May 11th. He was sixty-eight years of age, and is survived by a widow.

Dr. Howard Hendry, a dentist of Steubenville, Ohio, committed suicide June 16th. Mental trouble over ill health is given as a reason for his suicide.

Dr. A. S. Page, a prominent dentist of Columbia, Tenn., committed suicide May 19th. He had been in ill health for several months. A wife and two children survive.

Dr. John F. Meyer, a prominent dentist of New Albany, Ky., died May 21st. Death was due to a nervous collapse, the result of overwork. The doctor was 41 years of age.

Dr. Charles Warner, a prominent dentist of Evanston, Illinois, was found dead in his office, June 3rd. He accidentally shot himself while cleaning a revolver. His wife survives him.

Dr. F. E. Black, a well known dentist of Knoxville, Tenn., died May 9th after a short illness. Death was due to congestion of the lungs. He is survived by a widow and one daughter.

Dr. Henry T. King, a practicing dentist in Fremont, Nebraska, died June 10th, after an illness of five days. He was for a number of years secretary of the State Dental Association and ranked high in his profession. He is survived by a widow, two sons and three daughters.

Dr. John Byram, a well known dentist of Indianapolis, Indiana, committed suicide by hanging himself. Fear of going insane is given as the motive for suicide. Dr. Byram was a member of the faculty of the Indiana Dental College, a lecturer and a writer of prominence and an authority on porcelain work.

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